COVID-19 Challenge: Magnetic reagents for detection of COVID-19 and other RNA based molecular diagnostic kits

Sponsor

National Research Council of Canada (NRC)

For More Information

Visit the COVID-19 Challenge website [1].

Description

Testing for SARS-CoV-2 in hospitals and diagnostic lab settings has overwhelmed the current workflow as is mainly using manual preparation and experimentation. This has caused severe backlogs of tests to be performed, which is especially critical since samples only possess a finite lifetime and testing delay renders results unreliable. A major cause of the diagnostic shortcomings remains the access to reagents and buffers that allow for rapid viral RNA extraction from patient samples. This is a necessary pre-requisite for downstream diagnostic testing using genetic markers for COVID-19.

Current supply shortages in reagents are directly caused by Canadian dependence on foreign suppliers that can adversely affect the supply chain. Amongst the sample preparation methods highly amenable to automation are ones that based on magnetic bead technology. This allows for less manipulation without need of centrifugation steps. Compared to spin-columns, bead-based technology is also more amenable to microfluidic integration and manipulation. However, the access to compatible reagents for nucleic acid extraction – viral RNA more specifically – continues to pose a serious obstacle. In addition, existing solutions are subject to highly specific protocols that do not possess the ability for on the fly customization and adaptation to existing and potential microfluidic formats.

The NRC is thus in need of Canadian-based access to magnetic-based reagents for sample preparation and viral RNA extraction. This would allow the integration within existing and potential workflows based around automated sample preparation that is desperately needed in diagnostic settings. Addressing this need in the Phase 1 of the ISC Challenge will immediately fill the capacity gap in government of Canada laboratories and is absolutely required in order to empower larger fabrication capacity in the potential Phase 2.

Eligibility

Solution proposals can only be submitted by **a small business** that meets all of the following criteria:

- for profit
- incorporated in Canada (federally or provincially)
- 499 or fewer full-time equivalent (FTE) employees*
- research and development activities that take place in Canada
- 50% or more of its annual wages, salaries and fees are currently paid to employees and contractors who spend the majority of their time working in Canada*
- 50% or more of its FTE employees have Canada as their ordinary place of work*
- 50% or more of its senior executives (Vice President and above) have Canada as their principal residence*

* Calculations must take into account and include affiliated businesses, such as parent companies and subsidiaries, that are either in or outside of Canada.

Funding Availability

Multiple grants could result from this Challenge.

- Estimated number of Phase 1 grants: 2
- Estimated number of Phase 2 grants: 1

Maximum Project Value

The maximum funding available for any Phase 1 Grant resulting from this Challenge is **$300,000.00 CAD for up to 3 months**.

The maximum funding available for any Phase 2 Grant resulting from this Challenge is **$1,000,000.00 CAD for up to 12 months**. Only eligible businesses that have completed Phase 1 could be considered for Phase 2.

Indirect Costs

40%

Project Duration

- Phase 1 projects have a maximum duration of 3 months.
- Phase 2 projects have a maximum duration of 12 months.

Special Notes

Please refer to the Office of Research COVID 19 web-page [2] for directives related to research

activities at the University of Guelph.

Deadlines

If College-level review is required, your College will communicate its earlier internal deadlines.

Type	Date
External Deadline	Tuesday, June 16, 2020 - 2:00pm

How to Apply

Eligible companies are required to submit their application through the Innovative Solutions Canada Website [1].
For Questions, please contact
All incoming questions regarding this specific challenge should be addressed to solutions@canada.ca [3].

All enquiries must be submitted in writing no later than ten calendar days before the Challenge Notice closing date. Enquiries received after that time may not be answered.

You can also consult the Frequently asked questions [4] about the Innovative Solutions Canada Program.

A glossary [5] is also available.

Alert Classifications**Category:**
Funding Opportunities and Sponsor News

Disciplines:
Health and Life Sciences
Physical Sciences and Engineering

Source URL:https://www.uoguelph.ca/research/alerts/content/covid-19-challenge-magnetic-reagents-detection-covid-19-and-other-rna-based-molecular

Links
[1] https://www.ic.gc.ca/eic/site/101.nsf/eng/00110.html
[2] https://www.uoguelph.ca/research/article/2019-novel-coronavirus-information
[3] mailto:solutions@canada.ca
[4] http://www.ic.gc.ca/eic/site/101.nsf/eng/00004.html
[5] http://www.ic.gc.ca/eic/site/101.nsf/eng/00005.html